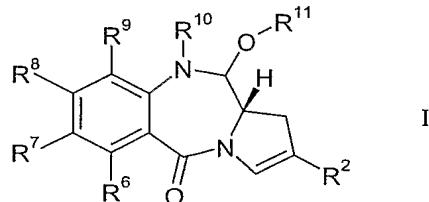


CLAIMS

1. A compound of formula I:



5 and salts, solvates and chemically protected forms thereof, wherein:

R⁶ and R⁹ are independently selected from H, R, OH, OR, SH, SR, NH₂, NHR, NRR', nitro, Me₃Sn and halo;

10 R and R' are independently selected from optionally substituted C₁₋₁₂ alkyl, C₃₋₂₀ heterocyclyl and C₅₋₂₀ aryl groups;

R⁷ and R⁸ are independently selected from H, R, OH, OR, SH, SR, NH₂, NHR, NRR', nitro, Me₃Sn and halo,

15 or the compound is a dimer with each monomer being of formula (I), where the R⁷ groups or R⁸ groups of each monomers form together a dimer bridge having the formula -X-R"-X- linking the monomers, where R" is a C₃₋₁₂ alkylene group, which chain may be interrupted by one or more heteroatoms and/or aromatic rings, and each X is independently selected from O, S, or NH;

20 or any pair of adjacent groups from R⁶ to R⁹ together form a group -O-(CH₂)_p-O-, where p is 1 or 2;

R¹⁰ is a carbamate-based nitrogen protecting group;

R¹¹ is an oxygen protecting group; and

R² is a labile leaving group.

25 2. A compound according to claim 1, wherein R⁹ is H.

3. A compound according to either claim 1 or claim 2, wherein R⁶ is selected from H, OH, OR, SH, NH₂, nitro and halo.

30 4. A compound according to any one of the preceding claims, wherein R¹⁰ is Troc.

5. A compound according to any one of the preceding claims, wherein R¹¹ is a silyl oxygen protecting group or THP.

6. A compound according to any one of the preceding claims, 5 wherein R² is triflate.

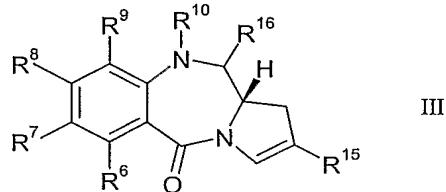
7. A compound according to any one of the preceding claims, wherein R⁷ and R⁸ are independently selected from H, OH, OR, SH, NH₂, NHR, NRR' and halo.

10 8. A compound according to any one of claims 1 to 6, wherein the compound is a dimer with each monomer being of formula (I), where the R⁷ groups or R⁸ groups of each monomer form together a dimer bridge having the formula -O-(CH₂)_n-O- linking the monomers, where n 15 is from 3 to 12.

9. A compound according to claim 8, wherein n is from 3 to 7.

10. A compound according to either claim 8 or claim 9, wherein 20 the substituents R⁸ join to form the dimer bridge.

11. A compound of formula III:



and salts, solvates, chemically protected forms and prodrugs 25 thereof, wherein:

R⁶ and R⁹ are independently selected from H, R, OH, OR, SH, SR, NH₂, NHR, NRR', nitro, Me₃Sn and halo;

R and R' are independently selected from optionally substituted C₁₋₁₂ alkyl, C₃₋₂₀ heterocyclyl and C₅₋₂₀ aryl groups;

30 R⁷ and R⁸ are independently selected from H, R, OH, OR, SH, SR, NH₂, NHR, NRR', nitro, Me₃Sn and halo,

or the compound is a dimer with each monomer being of formula (I), where the R⁷ groups or R⁸ groups of each monomers form together a dimer bridge having the formula -X-R"-X- linking the monomers, where R" is a C₃₋₁₂ alkylene group, which chain may be interrupted by one or more heteroatoms and/or aromatic rings, and each X is independently selected from O, S, or NH; or any pair of adjacent groups from R⁶ to R⁹ together form a group -O-(CH₂)_p-O-, where p is 1 or 2; R¹⁰ is a carbamate-based nitrogen protecting group; and R¹⁶ is either O-R¹¹, wherein R¹¹ is an oxygen protecting group, or O-R¹¹ is OH; or R¹⁰ and R¹⁶ together form a double bond between N10 and C11; R¹⁵ is R; and wherein, when R⁷ and R⁸ are OMe, R⁶ and R⁹ are H, and where R¹⁰ and R¹⁶ together form a double bond between N10 and C11, R¹⁵ is not phenyl, 4-methylphenyl, 2-methylphenyl, 4-ethylphenyl, 2,6-dimethylphenyl, 4-methoxyphenyl, 4-tert-butylphenyl, 4-fluorophenyl, 4-chlorophenyl, 2-naphthyl or 2-thiophenyl.

12. A compound according to claim 11, wherein when R⁷ and R⁸ are OMe, R⁶ and R⁹ are H, and R¹⁵ is R, R is selected from the group 3-methoxyphenyl, 4-biphenyl, 4-phenoxyphenyl, 3,4-methylenedioxyphenyl, trans-2-(4-methylphenyl)vinyl, trans-propenyl, 4-dimethylaminophenyl, 4-methylthiophenyl, 4-vinylphenyl, 3,4-dichlorophenyl, 4-trifluoromethylphenyl, 4-isopropylphenyl, 4-cyanophenyl, 3-pyridinyl, 4-pyridinyl, 4-formylphenyl, 4-carboxyphenyl, 2,6-dimethoxyphenyl, 4-acetanilide, 4-aminophenyl, 1-naphthyl, 5-indole, 3-aminophenyl, 2,6-difluorophenyl, 1-pyrenyl, 4-hydroxyphenyl and trans-hexenyl.

13. A compound according to either claim 11 or claim 12, wherein when R⁷ and R⁸ are OMe, R⁶ and R⁹ are H, and R¹⁵ is R, R is selected from a C₃₋₂₀ heterocyclyl group having a nitrogen ring atom, C₅₋₂₀ aryl group having a nitrogen-containing substituent, or a C₅₋₂₀

heteroaryl group having a nitrogen ring atom or a nitrogen-containing substituent.

14. A compound according to claim 11, wherein the compound is a dimer with each monomer being of formula (I), where the R⁷ groups or R⁸ groups of each monomer form together a dimer bridge having the formula -O-(CH₂)_n-O- linking the monomers, where n is from 3 to 12.

10 15. A compound according to claim 14, wherein n is from 3 to 7.

16. A compound according to either claim 14 or claim 15, wherein the substituents R⁸ join to form the dimer bridge.

15 17. A compound according to any one of claims 14 to 16, wherein R¹⁵ is selected from:

- (i) optionally substituted C₅₋₂₀ aryl groups;
- (ii) substituted C₂ alkyl groups; and
- (iii) optionally substituted C₃₋₇ alkyl groups.

20 18. A compound according to any one of claims 11 to 17, wherein R¹⁰ and R¹⁶ together form a double bond between N10 and C11.

25 19. A compound according to any one of claims 11 to 18, wherein R⁹ is H.

20. A compound according to any one of claims 11 to 19, wherein R⁷ and R⁸ are independently selected from H, OH, OR, SH, NH₂, NHR, NRR' and halo.

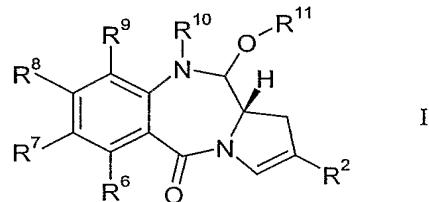
30 21. A compound according to any one of claims 11 to 20 for use in a method of therapy.

22. A pharmaceutical composition containing a compound of any one of claims 11 to 20, and a pharmaceutically acceptable carrier or diluent.

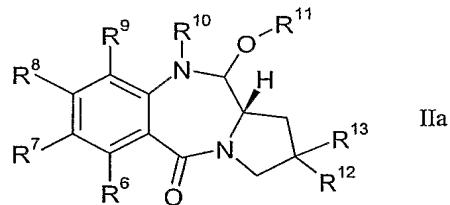
5 23. Use of a compound according to any one of claims 11 to 20 in the manufacture of a medicament for treating a proliferative disease.

10 24. A method of treatment of a proliferative disease, comprising administering to a subject in need of treatment a therapeutically-effective amount of a compound of any one of claims 11 to 20.

25. A method of synthesising a compound of formula I:



15 from a compound of formula IIa:



wherein:

R⁶ and R⁹ are independently selected from H, R, OH, OR, SH, SR, NH₂, NHR, NRR', nitro, Me₃Sn and halo;

20 R and R' are independently selected from optionally substituted C₁₋₁₂ alkyl, C₃₋₂₀ heterocyclyl and C₅₋₂₀ aryl groups;

C⁷ and R⁸ are independently selected from H, R, OH, OR, SH, SR, NH₂, NHR, NRR', nitro, Me₃Sn and halo,

25 or the compound is a dimer with each monomer being of formula (I), where the R⁷ groups or R⁸ groups of each monomers form together a dimer bridge having the formula -X-R"-X- linking the monomers, where R" is a C₃₋₁₂ alkylene group, which chain may be interrupted

by one or more heteroatoms and/or aromatic rings, and each X is independently selected from O, S, or NH; or any pair of adjacent groups from R⁶ to R⁹ together form a group -O-(CH₂)_p-O-, where p is 1 or 2;

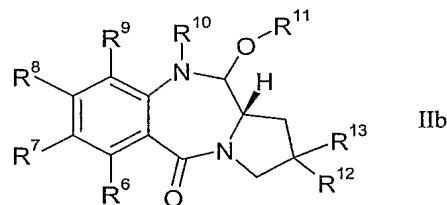
5 R¹⁰ is a carbamate-based nitrogen protecting group;

R¹¹ is an oxygen protecting group;

R² is a labile leaving group; and

R¹² and R¹³ together form =O.

10 26. A method according to claim 25, wherein the compound of formula **IIa** is synthesised from a compound of formula **IIb**:



wherein said compound of formula **IIb** has R⁶, R⁷, R⁸, R⁹, R¹⁰ and R¹¹ defined according to claim 25, and for said compound of formula **IIb** 15 R¹² is O-R¹⁴, and R¹³ is H; and R¹⁴ is an oxygen protecting group orthogonal to R¹¹.

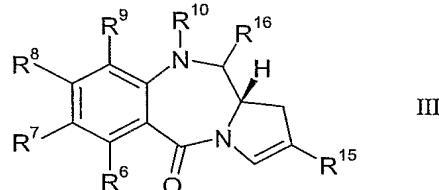
20 27. A method according to claim 26, wherein the compound of formula **IIa** is synthesised using an oxidation reaction performed under Swern conditions, or a method involving the TPAP or the Dess Martin reagents.

25 28. A method according to any one of claims 25 to 27, wherein when R² in the compound of formula **I** is -OSO₂CH₃, -OSO₂(C_nF_{2n+1}) where n = 0, 1 or 4, or -OSO₂R^s where R^s is an optionally substituted phenyl group, then said compound of formula **I** is synthesised by using a treatment step with the appropriate R² anhydride.

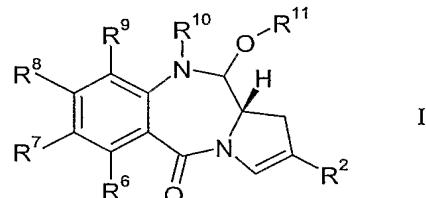
30 29. A method according to any one of claims 25 to 27, wherein when R² in the compound of formula **I** is -I or -Br, then said compound of formula **I** is synthesised by using a reaction step involving hydrazine and iodine or bromine.

30. A method according to any one of claims 25 to 27, wherein when R² in the compound of formula I is -Cl, then said compound of formula I is synthesised by using a reaction step involving 5 phosphorous oxychloride.

31. A method of synthesising a compound of formula III:



from a compound of formula I:



10

wherein

R⁶ and R⁹ are independently selected from H, R, OH, OR, SH, SR, NH₂, NHR, NRR', nitro, Me₃Sn and halo;

15 R and R' are independently selected from optionally substituted C₁₋₁₂ alkyl, C₃₋₂₀ heterocyclyl and C₅₋₂₀ aryl groups;

R⁷ and R⁸ are independently selected from H, R, OH, OR, SH, SR, NH₂, NHR, NRR', nitro, Me₃Sn and halo,

20 or the compound is a dimer with each monomer being of formula (I), where the R⁷ groups or R⁸ groups of each monomers form together a dimer bridge having the formula -X-R"-X- linking the monomers, where R" is a C₃₋₁₂ alkylene group, which chain may be interrupted by one or more heteroatoms and/or aromatic rings, and each X is independently selected from O, S, or NH;

25 or any pair of adjacent groups from R⁶ to R⁹ together form a group -O-(CH₂)_p-O-, where p is 1 or 2;

R¹⁰ is a carbamate-based nitrogen protecting group;

R² is a labile leaving group;

R^{16} is either $O-R^{11}$, where R^{11} is an oxygen protecting group, or OH , or R^{10} and R^{16} together form a double bond between $N10$ and $C11$; and R^{15} is R .

5 32. A method according to claim 31, wherein the synthesis of said compound of formula **III** uses a palladium catalysed coupling step.

33. A method according to claim 32, wherein the palladium catalyst is $Pd(PPh_3)_4$, $Pd(OCOCH_3)_2$, $PdCl_2$ or $Pd(dba)_3$.

10 34. A method according to either claim 32 or claim 33, wherein the coupling reaction is performed under microwave conditions.

15 35. A method according to any one of claims 32 to 34, wherein the palladium catalyst is solid supported.